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# FROZEN FOODS

HOW TO FREEZE  
HOW TO COOK

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# FROZEN FOODS

## ● How to Freeze

## ● How to Cook

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**F**REEZING is one of the simplest and fastest methods of preserving foods at home. It keeps the natural color, fresh flavor and food values of most fruits, vegetables and meats better than other methods of food preservation.

Freezing provides the convenience of having the food products that can be prepared quickly for serving.

Costs of owning and operating a home freezer may range from 13 to 28 cents a pound of food frozen, depending on rate of turnover. On a pound basis, freezing costs decrease as the quantity of food frozen is increased. Cost estimates are based on electricity used, costs of packaging materials, repairs and average freezer costs distributed over 10 years.

Directions are given in this publication for freezing fruit, vegetables, meats, dairy products, eggs, fish, prepared foods and other foods. Information is given also on the preparation of certain frozen foods for the table.

Directions should be followed carefully, because the quality of product can vary with freshness of product used, methods of preparation, packaging and conditions of freezing.

### *Five Points to Success in Freezing Foods*

#### ● GOOD QUALITY

Careful selection of foods to be frozen is important. The food coming out of the locker drawer or the home freezer is no better than it was before it was frozen and stored.

#### ● CAREFUL PREPARATION

Speed in preparation is necessary. Promptness in handling, chilling and freezing any product helps retain quality. Follow the instructions carefully in the preparation of any food for freezing.

#### ● PROPER PACKAGING

The purpose of packaging or wrapping food is to keep it from drying out and to preserve food value, flavor, color and pleasing texture.

The selection of containers depends upon the type of food to be frozen and personal preference.

Packaging materials should be moisture-vapor-proof to prevent evaporation and to retain the highest quality in frozen foods. Many packaging materials for frozen foods are not moisture-vapor-proof, but are sufficiently moisture-vapor-resistant to retain satisfactory quality of fruit and vegetables during storage. Glass, metal and rigid plastics are examples of moisture-vapor-proof packaging materials. Most bags, sheets of freezer wrapping materials and waxed cartons made especially for freezing are moisture-vapor-resistant. Ordinary waxed papers, household aluminum foil and cartons for cottage cheese and ice cream should not be used because they are not moisture-vapor-proof or resistant.

#### Rigid Containers

Rigid containers made of *aluminum, glass, plastic, tin* or *moisture-vapor-resistant cardboard* are suitable for all packs, and are especially good for liquid packs. Plain tin or R-enamel cans may be used for all foods, but some foods may be better packed in cans with special enamel linings; C-enamel for foods containing considerable sulfur—corn, lima beans, carrots; R-enamel for highly colored foods—beets, berries, red cherries, fruit juices, plums, pumpkin, rhubarb, squash, sweet potatoes. Food packed in rigid containers should have an air-tight seal. Be sure the lid is on straight and, if needed, use freezer tape to insure an air-tight seal where lid and container come together.

#### Nonrigid Containers

Bags and sheets of moisture-vapor-resistant cellophane, heavy aluminum foil, pliofilm, polyethylene



or laminated papers and duplex bags of various combinations of paper, metal foil, glassine, cellophane and rubber latex are suitable for dry-packed vegetables, fruits and meats. Bags can be used for liquid packs, but are less convenient than rigid containers.

Plastic bags should have an air-tight seal. Fill bags, leaving enough head space to make a "goose neck" twist. To make the goose neck twist, squeeze air from filled bag, twist top, turn over about half way, and tie with freezer wire or rubber band. Bags and sheets are used with or without outer cardboard cartons to protect against tearing. Bags without a protective carton are difficult to stack. The sheets may be used for wrapping such foods as corn-on-the-cob or asparagus. Use the drugstore wrap as illustrated on pages 16 and 17.

#### **Size**

Select a size that will hold only enough of a fruit or vegetable for one meal.

#### **Reuse**

Tin cans, glass and rigid plastic and aluminum containers can be reused indefinitely.

Lids to jars can be reused until rubber becomes worn.

### **● LOADING THE FREEZER**

Freeze fruits and vegetables soon after they are packed. Put them in the freezer a few packages at a time as they become ready, or keep packages in the refrigerator until all are ready. Then transfer them to the home freezer, or carry them in an insulated box or bag to the locker plant. Freeze at 0 degrees F. or below.

Freeze packaged meat as soon as possible to prevent meat juices from draining. For best results, meat should be quick frozen at commercial plants where correct freezing temperatures (-20 degrees F. in still air or -5 degrees F. in blast or fan-circulated air) are maintained. These low temperatures are not reached in home food freezers. Transfer meat to a home food freezer in an insulated bag or box. Small quantities of meat may be frozen in home food freezers.

Put no more unfrozen food into a freezer than will freeze within 24 hours. Usually this will be about 2 or 3 pounds of food per cubic foot of freezer capacity. Overloading slows down rate of freezing, and foods that freeze too slowly may lose quality or spoil. For quickest freezing, place packages against freezing plates or coils, and leave a little space between packages so air can circulate freely.

After fruits, vegetables and meats are frozen, store them at 0 degrees F. or below.

### **● LENGTH OF STORAGE**

Frozen food undergoes slow changes in storage and will not retain its quality indefinitely. The length of time that frozen products may keep without loss of quality depends on:

Proper handling before freezing.

Packaging material used.

Storage temperature.

Kind of food stored.

Do not store frozen food too long. Suggested lengths of storage for different foods are:

Fruits and vegetables—1 year or less.

Fresh pork and fish—3 to 6 months.

Poultry—6 months.

Sausage and ground meats—1 to 3 months.

Lamb and veal—6 to 9 months.

Beef—6 to 12 months.

Cooked foods—storage varies greatly for different products.

See section on freezing prepared foods.

Thaw food properly, and use frozen food immediately after thawing. Since all bacteria are not killed by freezing, they become more active as the food thaws. If frozen food is not used soon after thawing, more food value will be lost and spoilage will occur quickly.

#### **In Case of Emergency**

If power is interrupted or the freezer fails to refrigerate properly, do not open the home food freezer unnecessarily. Food in a loaded freezer usually will stay frozen for 2 days, even in summer. In a freezer with less than half a load, food may not stay frozen more than 1 day.

#### **Dry Ice to Prevent Thawing**

If the power is not to be resumed within 1 or 2 days, or if the freezer may not be back to normal operation in that time, use dry ice to keep the temperature below freezing and to prevent deterioration or spoilage of frozen food.

Fifty pounds of dry ice in a 20 cubic-foot home freezer should hold the temperature below freezing for 2 to 3 days in a freezer with less than half a load and 3 to 4 days in a loaded freezer, if dry ice is obtained quickly following interruption of power. Move food stored in the freezing compartment of a freezer to the storage compartment. Place dry ice on boards on top of the packages and do not open freezer more often than necessary. Do not handle dry ice with bare hands; it can cause burns. Use dry ice in a well-ventilated room. If dry ice is not available, try to locate a locker plant, and move the food there in insulated boxes.



## Refreezing

For highest quality keep foods frozen until it is defrosted for use. If frozen food thaws before needed, it may, under certain conditions, be safely refrozen to prevent loss.

The process of thawing and refreezing does not in itself make the fruit, vegetables and meats unsafe. Thawed foods spoil more rapidly than fresh foods and may become unsafe to eat if not refrigerated. Foods are not likely to be worth refreezing if they have reached temperatures of 40 to 45 degrees F. after passing through the slow temperature changes that occur in a home freezer when operation has stopped.

Fruit, vegetables and meats may be refrozen if they have not completely thawed, or if they have been thawed for a short time and have been in a

household refrigerator. The thawing and refreezing usually will result in lowered quality and loss of flavor. Refrozen vegetables may toughen, and refrozen fruits become soft and mushy. If flavor and texture of such refrozen fruits make them unsatisfactory for eating uncooked, they may be satisfactory for use in cooking.

Because low-acid foods, such as vegetables and meats spoil rapidly after they have thawed and reached a temperature above 45 degrees F., it is not advisable to refreeze them.

Acid foods, which include most fruit and fruit products, are likely to ferment after they have thawed and reached a temperature above 45 degrees F. Slight fermentation of acid foods may change or spoil flavor, but does not make them unsafe to eat.

## ... Freezing Fruit

### ● SELECTION AND PREPARATION

Most fruit can be frozen satisfactorily. Select sound, ripe fruit for freezing. Select fruit which is slightly riper than for canning but is not soft or mushy.

In general fruit is prepared for freezing as for eating. Keep fruit cool from the time it is gathered until it is frozen. Wash fruit in cold water, but do not allow the fruit to stand in the water. Some fruit loses food value and flavor, and some gets water soaked.

It is best to prepare enough fruit for only a few containers at a time, especially that which darkens rapidly. Two or 3 quarts is a good quantity to work with at one time.

### How to Prevent Discoloration

Some fruits, such as peaches, apricots, apples and pears, discolor easily. There are ways to prevent discoloration:

**Ascorbic acid (Vitamin C)** prevents discoloration and is available in tablet, crystalline or powdered form. Ascorbic acid tablets are more difficult to dissolve than crystalline or powdered ascorbic acid. Powdered or crystalline ascorbic acid is dissolved in the cold syrup just before pouring it over the fruit. Use  $\frac{1}{2}$  teaspoon ascorbic acid per quart of syrup. Ascorbic acid comes in 25, 50 and 100-milligram tablets. Use 1,000 milligrams (or ten 100 milligram tablets) for each quart of syrup.

For a dry sugar pack sprinkle dissolved ascorbic acid over fruit just before adding sugar. Use  $\frac{1}{4}$  teaspoon (or five 100 milligram tablets) ascorbic acid in  $\frac{1}{4}$  cup cold water to each quart of fruit. Use the same proportion for an unsweetened pack.

Some special commercial antidarkening preparations of ascorbic acid are now on the market. These usually contain added sugar and citric acid. Follow the manufacturer's directions when using them.

These materials may be obtained from druggists or where other freezing supplies are sold.

### ● PACKING

Most fruits have better texture and flavor if packed in sugar or syrup. Some may be packed without sweetening for use in special diets.

The selection of the way to pack fruit will depend on the intended use. Fruit packed in a syrup is generally better for dessert use; fruit packed in dry sugar or unsweetened is better for most cooking uses because there is less liquid in the products.

### Syrup Pack

Dissolve recommended amounts of sugar for each fruit in hot water. Cool thoroughly before pouring over prepared fruit.

Place the prepared fruit in containers and cover with syrup. Leave space at the top of the container to allow for expansion.

Use this table as a guide:

Containers with wide-top openings	Inches
Pints	$\frac{1}{2}$
Quarts	1
Containers with narrow-top openings	
Pints	$\frac{3}{4}$
Quarts	1 $\frac{1}{2}$

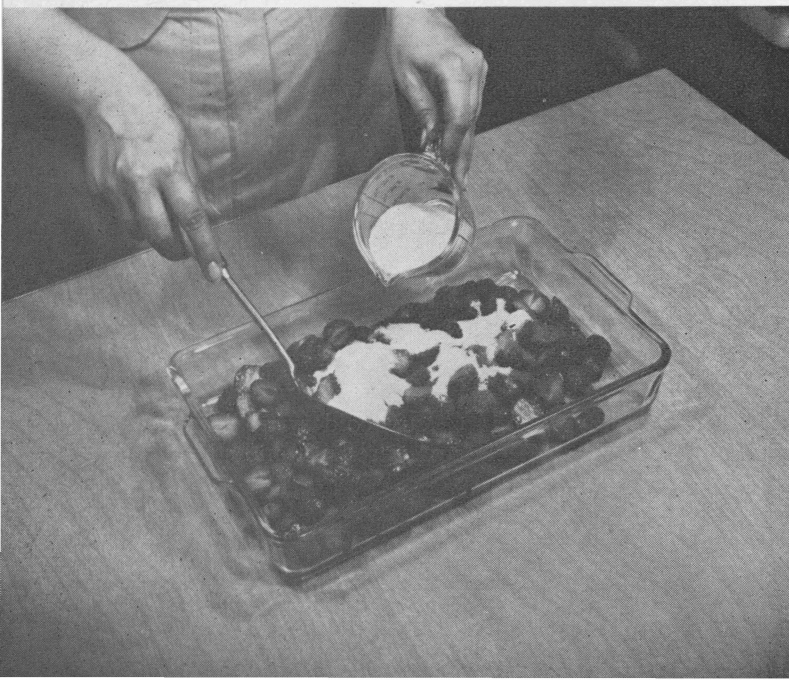
If desired, pour about  $\frac{1}{2}$  cup cold syrup into each pint container. Peel or prepare fruit and slice

# STRAWBERRIES

Select firm fully ripe, red berries. Sort according to sizes. Wash berries a few at a time in cold water. Lift berries gently out of water and drain.

Cap berries. Leave small berries whole, and slice large fruit into a bowl or shallow pan.

Sprinkle sugar over berries— $\frac{3}{4}$  cup to each quart of berries. Turn berries over gently until sugar is dissolved and juice is formed.





## *Packed in Sugar*

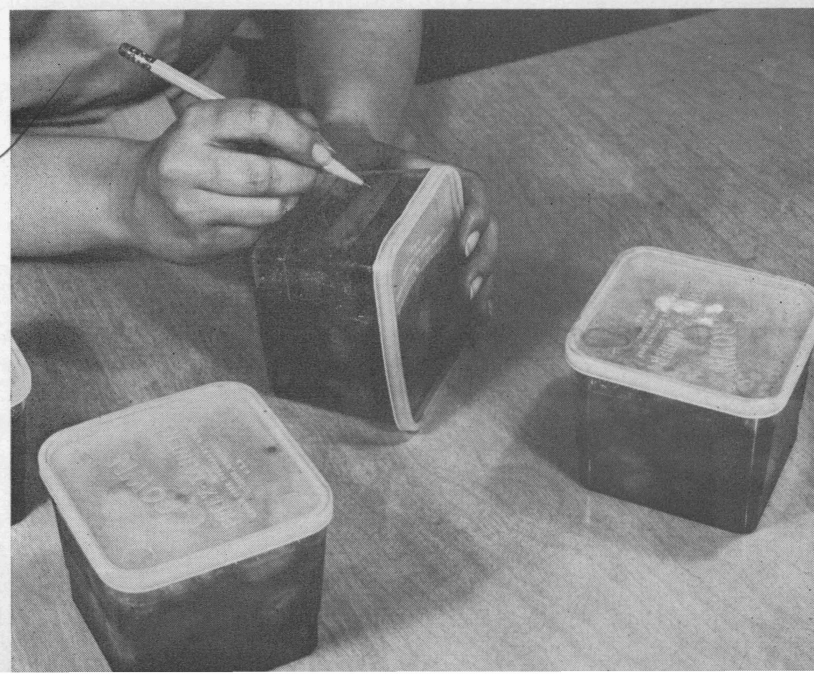
Pack berries in moisture-vapor-proof containers. Press down into juice. Leave  $\frac{1}{2}$ -inch headspace in the wide mouth pint container illustrated in picture.



Press lid on firmly to seal.



Label container with name of fruit, type of pack, locker number and date. Freeze immediately, and store at 0 degrees F. or below.





it directly into the container. If necessary, add syrup to cover.

For fruit which darkens, place crumpled moisture-vapor-proof paper between the lid and the fruit to keep it submerged.

Label containers with name of fruit, type of pack, locker number and date.

#### **Sugar Pack**

Place prepared fruit in a bowl. To avoid crushing fruit, do not prepare more than about 2 pints at one time.

Sprinkle required amount of sugar over fruit and allow to stand for a few minutes until the sugar begins to dissolve in the juice which will be drawn from the fruit.

Gently stir fruit until all sugar is dissolved and each piece is coated with juice.

Pack fruits tightly into containers, but do not crush. Leave 1/2-inch headspace in all sizes of containers.

Label containers with name of fruit, type of pack, locker number and date.

#### **Unsweetened Pack**

Unsweetened packs generally yield a lower quality product than packs with sugar or syrup; however, they often are needed for special diets. Figs, rhubarb and cranberries freeze satisfactorily with or without sugar.

Treat fruit for discoloration. Pack tightly into containers, but do not crush. Leave 1/2-inch headspace in all sizes of containers.

#### **APPROXIMATE YIELD OF FROZEN FRUITS FROM FRESH FRUITS**

<b>Fruit</b>	<b>Fresh, as purchased or picked</b>	<b>Frozen</b>
Apples	1 bu. (48 lb.)	32-40 pt.
Apricots	1 bu. (48 lb.)	60-72 pt.
Blackberries or Dewberries	1 crate (24 qt.)	32-36 pt.
Cantaloupe	1 doz. (28 lb.)	22 pt.
Cherries	1 bu. (56 lb.)	36-44 pt.
Cranberries	1 lb.	2 pt.
Peaches	1 bu. (48 lb.)	32-48 pt.
Pears	1 bu. (50 lb.)	40-50 pt.
Pineapple	5 lb.	4 pt.
Plums	1 bu. (56 lb.)	38-56 pt.
Strawberries	1 crate (24 qt.)	38 pt.

### *... Fruits for Freezing*

#### **APPLES**

##### **Preparation**

Wash, peel, trim, core and slice. Treat to prevent discoloration. See page 5 for directions. Cover with cold sugar syrup using 3 cups sugar to 4 cups water. Seal and freeze immediately.

#### **APPLE SAUCE**

##### **Preparation**

Wash, peel, trim, core and slice. Add 1/3 cup water to each quart of apple slices. Cook until tender. Cool and strain. Sweeten to taste with 1/4 to 3/4 cup sugar for each quart of sauce. Package and freeze immediately.

#### **APRICOTS**

##### **Preparation**

Wash, halve and pit. Peel and slice if desired. If apricots are not peeled, heat them in boiling water 1/2 minute to keep skins from toughening during freezing. Cool in cold water and drain. Treat to prevent discoloration. See page 5 for directions. Cover with cold syrup using 3 cups sugar to 4 cups water or mix 1/2 cup sugar with each quart of fruit. Seal and freeze immediately.

#### **AVOCADOS**

##### **Preparation**

Select soft ripe avocados with rinds free from dark blemishes. Wash, peel, halve and pit. Mash the pulp. Avocados are not frozen satisfactorily whole or sliced. For an unseasoned product, add 1/8 teaspoon crystalline ascorbic acid to each quart of puree. For seasoned product, add 1 tablespoon and 2 teaspoons lemon juice and 1 teaspoon salt to 2 cups mashed avocados.

#### **BLACKBERRIES**

##### **Preparation**

Select fully ripened, sound berries. Handle as little as possible. Wash, cap and drain. Use 3/4 cup sugar for each quart of berries, or cover with cold sugar syrup using 3 cups sugar to 4 cups water. Add 1 cup sugar to each quart of crushed berries or puree, and stir until dissolved. Seal and freeze immediately.

#### **DEWBERRIES**

##### **Preparation**

Select fully ripened, sound berries. Handle as little as possible. Wash, cap and drain. Use 3/4 cup sugar for each quart of berries, or cover with cold sugar syrup using 3 cups sugar to 4 cups water. Add 1 cup sugar to each quart

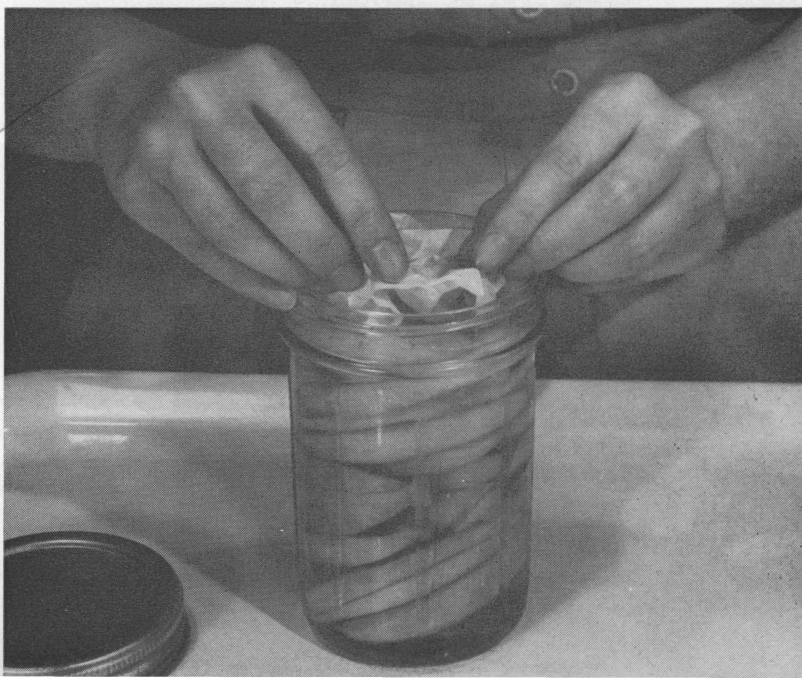
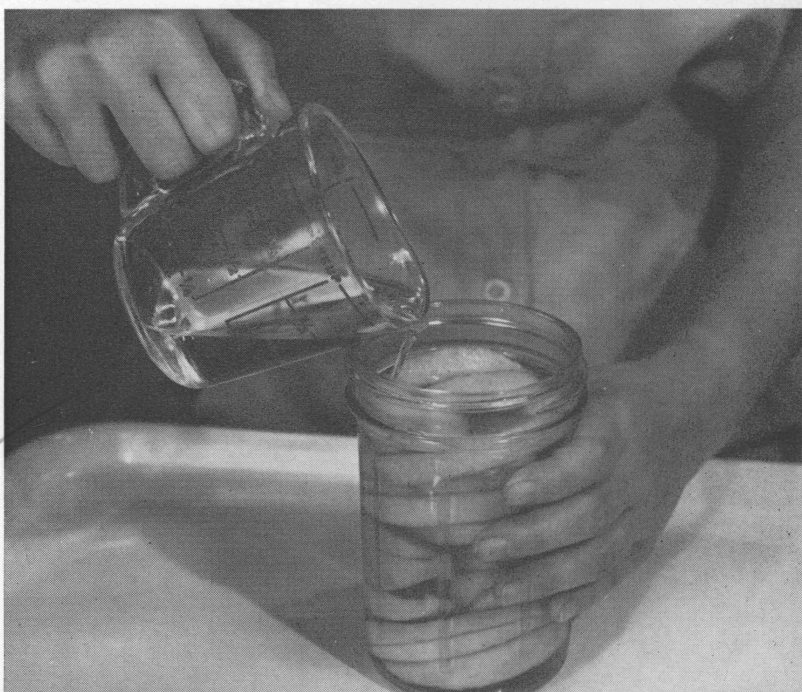
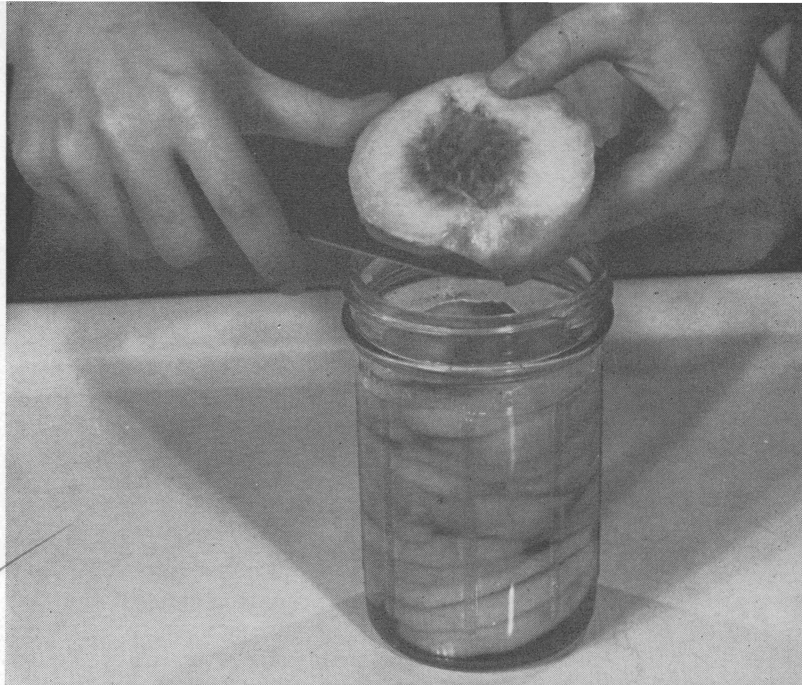
# PEACHES . . .

## *Packed in Syrup*

Make sugar syrup in proportion of 3 cups sugar to 4 cups water. Add  $\frac{1}{2}$  teaspoon powdered ascorbic acid per quart of syrup or ten 100-milligram tablets. Pour about  $\frac{1}{2}$  cup of cold sugar syrup in pint freezer container. Slice peeled peaches directly into the container.

Press fruit down and add syrup to  $\frac{1}{2}$  inch from top of container.

Place crumpled freezer paper, heavy waxed paper or aluminum foil on top of peaches. This prevents the peaches from floating above the syrup. Seal and freeze immediately.





of crushed berries or puree, and stir until dissolved. Seal and freeze immediately.

### **CANTALOUPE**

#### **Preparation**

Cut in half, remove seeds and peel. Cut into slices, cubes or balls. Cover with cold sugar syrup using 2 cups sugar to 4 cups water, or pack dry using no sugar. Seal and freeze immediately.

### **SOUR CHERRIES**

#### **Preparation**

Sort, wash and drain. Remove pits if desired. Use  $\frac{3}{4}$  cup sugar to 1 quart cherries if they are to be used in pies. If cherries are to be served uncooked, cover with cold syrup using 7 cups sugar to 4 cups water. Seal and freeze immediately.

### **CITRUS FRUIT**

#### **Preparation**

Knife-peel fruit, removing all white membrane and fiber. Separate segments and remove seed. Cover with cold syrup made from 3 cups sugar to 4 cups excess juice and water. For better quality add  $\frac{1}{2}$  teaspoon (or ten 100-milligram tablets) ascorbic acid to a quart of syrup. Seal and freeze immediately.

### **CITRUS JUICES**

#### **Preparation**

Extract juice from fruit, using squeezer that does not press oil from rind. Sweeten with 2 tablespoons sugar for each quart of juice or pack without sugar. For better quality add  $\frac{3}{4}$  teaspoon (or fifteen 100-milligram tablets) ascorbic acid for each gallon of juice. Seal and freeze immediately.

### **CRANBERRIES**

#### **Preparation**

Sort, wash and drain. Freeze whole without sugar, or cover with cold syrup made from  $4\frac{3}{4}$  cups sugar to 4 cups water. Cranberries also may be crushed and frozen. Add 2 cups of water to each quart (1 lb.) of berries. Cook until the skins have popped. Press through a sieve. Cool and add sugar to taste—about 2 cups for each quart of puree. Seal and freeze immediately.

### **FIGS**

#### **Preparation**

Select soft-ripe fruit. Make sure they have not become sour in the center. Sort, wash and cut off stems. Peel if desired. Halve or leave whole. Treat for discoloration. See page 5 for directions. Freeze without sugar or cover with

a cold syrup made from  $2\frac{1}{2}$  cups sugar to 4 cups water.

### **FRUIT COCKTAIL**

#### **Preparation**

Use any combination of fruits desired—sliced or cubed peaches or apricots, melon balls, orange or grapefruit sections, whole seedless grapes, Bing cherries, or pineapple wedges. Cover with cold syrup using 2 cups sugar to 4 cups water or 3 cups sugar to 4 cups water depending on fruits used. Seal and freeze immediately.

### **FRUIT JUICES**

#### **Preparation**

For juice to be used in beverages, select well ripened fruit. For jelly making use a mixture of slightly ripe and underripe fruit. Heat fruit (but do not boil) in a small amount of water. Heating time and amount of water will vary with type of fruit. Strain the juice through a jelly bag. Cool, add sugar to taste later. Seal and freeze immediately.

### **GRAPES**

#### **Preparation**

Wash and remove stems. Cover with cold syrup using 3 cups sugar to 4 cups water. Seal and freeze immediately.

### **PEACHES**

#### **Preparation**

See page 9 for directions for packing in sugar syrup.

#### **Dry Sugar Pack**

Add  $\frac{2}{3}$  cup sugar to each quart prepared peaches. See page 5 for directions for preventing discoloration. Mix gently until sugar has dissolved. Package, seal and freeze immediately.

#### **Crushed or Pureed**

Add 1 cup sugar and  $\frac{1}{8}$  teaspoon (or two and one-half 100-milligram tablets) ascorbic acid to each quart of crushed fruit. Package, seal and freeze immediately.

### **PEARS**

#### **Preparation**

Peel, cut in halves or quarters, and remove cores. Heat pears in boiling syrup made from 3 cups sugar to 4 cups water 1 to 2 minutes depending on size of pieces. Drain and cool. Treat for discoloration. See page 5 for directions. Cover with cold syrup, in which pears were heated. Seal and freeze immediately.

### **PERSIMMONS**

#### **Preparation**

Peel, cut into quarters, and remove seed. Press through a sieve. Add  $\frac{1}{8}$  teaspoon (or two and



one-half 100-milligram tablets) ascorbic acid to each quart of persimmons. Pack unsweetened, or add 1 cup sugar to each quart of puree. Seal and freeze immediately.

### **PINEAPPLE**

#### **Preparation**

Wash, peel and slice. Remove cores. Leave in slices, crush or cut in chunks. Cover with cold syrup using 2 cups sugar to 4 cups juice and water, or freeze without sugar. Seal and freeze immediately.

### **PLUMS**

#### **Preparation**

Wash and remove stems. Slice large plums and remove pit if desired. Soft plums may be made into puree. Press through a sieve or colander.

Cover with cold syrup using 3 to 4¾ cups sugar to 4 cups water, or freeze unsweetened. Add ½ to 1 cup sugar and ¼ teaspoon (or five 100-milligram tablets) ascorbic acid to each quart of plum puree. Seal and freeze immediately.

### **STRAWBERRIES**

#### **Preparation**

See pictures on pages 6 and 7 for directions for packaging and freezing.

### **WATERMELON**

#### **Preparation**

Slice, peel and remove seeds. Cut into slices, cubes or balls. Cover with cold syrup using 2 cups sugar to 4 cups water. Seal and freeze immediately.

## *Freezing Vegetables*

### **• SELECTION AND PREPARATION**

Select fresh, tender vegetables right from the garden for quality products. Select vegetables at the right stage for good eating.

During hot weather harvest vegetables in the early morning before they have absorbed much heat from the sun. Freeze without delay, because they lose quality rapidly after harvesting. If it is necessary to store vegetables for a short time after harvesting, spread them out loosely in a cool, well ventilated place, or pack loosely in the refrigerator.

The preparation of vegetables for freezing is similar to that required for cooking. Wash thoroughly in cold water, drain and sort; peel, trim and cut as directed for each vegetable.

### **• HEATING BEFORE PACKAGING**

It is necessary to heat vegetables before freezing to slow or stop the action of enzymes. Until vegetables are ready to pick, enzymes help them grow and mature. After that they cause loss of flavor and color. If vegetables are not heated enough, the enzymes continue to be active during frozen storage. The vegetables will then develop off-flavors in a few months and may discolor or toughen. Heating also wilts or softens vegetables and makes them easier to pack. Too long a heating period will result in softening of texture and an unnecessary loss of water soluble vitamins and minerals.

#### **To Heat in Boiling Water**

For home freezing the most satisfactory way to heat practically all vegetables is in boiling water. Use a large kettle that can be covered and into which a fine-mesh wire basket fits; or use a blancher

which has a blanching basket and cover. A large, loose cheesecloth bag may be used in place of the wire basket in kettle.

For each pound of prepared vegetable use at least 1 gallon of boiling water in the blancher or kettle. Put vegetables in blanching basket, cheesecloth bag or wire basket and lower into the boiling water.

Place cover on blancher or kettle and keep covered during entire heating period. Keep the heat on high so that the water will continue boiling vigorously. Start counting heating time as soon as the vegetable is put into the boiling water. Each vegetable requires a different heating time. Follow exactly time given for each vegetable.

#### **Other Ways to Heat**

Pumpkin, sweet potatoes and winter squash may be heated in a pressure cooker or in the oven before freezing. Tomatoes for juice may be simmered. Follow instructions given for these vegetables.

### **• COOLING**

Cool vegetables quickly and thoroughly to stop the cooking. To cool vegetables heated in boiling water, plunge the basket of vegetables immediately into running cold water or a large container of iced water. It will take about as long to cool the food as it does to heat it. Test coolness of the vegetables by biting into several pieces. If the product is cool to the tongue, it is cool enough to pack. Remove vegetables from the water and drain thoroughly.

To cool vegetables heated in the oven or a pressure cooker, keep pan of food in iced water until cooled.

## ● PACKAGING

After the vegetables have been heated, cooled and drained, pack in airtight moisture-vapor-proof containers, leaving 1/2-inch headspace. Seal according to type of container being used.

Label containers with name of vegetable, locker number and date.

### APPROXIMATE YIELD OF FROZEN VEGETABLES FROM FRESH VEGETABLES

Vegetables	Fresh, as purchased or picked	Frozen
Asparagus	1 crate (12 2-lb. bunches)	15-22 pt.
Beans, Lima (in pods)	1 bu. (32 lb.)	12-16 pt.

Beans (snap)	1 bu. (30 lb.)	30-45 pt.
Beets (without tops)	1 bu. (52 lb.)	35-42 pt.
Broccoli	1 crate (25 lb.)	24 pt.
Carrots (without tops)	1 bu. (50 lb.)	32-40 pt.
Cauliflower	2 medium heads	3 pt.
Corn, sweet (whole-grain)	1 bu. (35 lb.)	14-17 pt.
Corn (cream-style)	1 bu. (35 lb.)	12-14 pt.
Greens (chard, mustard)	1 bu. (12 lb.)	8-12 pt.
Okra	1 bu. (26 lb.)	34 pt.
Peas, English	1 bu. (30 lb.)	12-15 pt.
Peppers, green	2/3 lb. (3 peppers)	1 pt.
Pumpkin	3 lb.	2 pt.
Rhubarb	15 lb.	15-22 pt.
Spinach	1 bu. (18 lb.)	12-18 pt.
Squash (summer)	1 bu. (40 lb.)	32-40 pt.
Squash (winter)	3 lb.	2 pt.
Sweet potatoes	1 bu. (55 lb.)	36-44 pt.

## .... Vegetables for Freezing\*

### ASPARAGUS

#### Preparation

Discard woody and blemished stalks. Wash in running cold water. Sort according to size. Trim stalks by removing scales with a sharp knife. Cut in lengths to fit the package.

*Heat in boiling water—*

Small stalks—2 minutes

Medium stalks—3 minutes

Large stalks—4 minutes

Cool, drain, package and freeze immediately.

### BEANS, LIMA

#### Preparation

Select well filled pods with young tender beans. Wash, shell and sort according to size.

*Heat in boiling water—*

Small beans—2 minutes

Medium beans—3 minutes

Large beans—4 minutes

Cool, drain, package and freeze immediately.

### BEANS, SHELLED GREEN

#### Preparation

Select pods that are plump, not dry or wrinkled. Wash, shell.

*Heat in boiling water—*

1 minute

Cool, drain, package and freeze immediately.

### BEANS, SNAP

#### Preparation

See pictures on page 13 for directions for preparing, packaging and freezing.

\*Varieties for some vegetables have been established as preferred for freezing. L-451, *Local Market and Home Garden Vegetable Varieties*, contains this information.

### BEETS

#### Preparation

Wash. Leave roots and 1 inch of tops. Cook in boiling water until tender—for small beets 25 to 30 minutes, for medium-sized beets 45 to 50 minutes. Drain and cool in cold water. Peel. Slice or dice. Package and freeze immediately.

### BROCCOLI

#### Preparation

Select tight, compact, dark green heads, with tender stalks free from woodiness. Wash, peel stalks and trim. If necessary to remove insects, soak for 1/2 hour in a solution made of 4 teaspoons salt to 1 gallon cold water. Split lengthwise into pieces so that flowerets are not more than 1 1/2 inches across.

*Heat in boiling water—*

3 minutes

Cool, drain, package and freeze immediately.

### CARROTS

#### Preparation

Select smooth, tender, mild flavored carrots. Remove tops, wash and peel. Leave small carrots whole. Cut others into 1/4-inch cubes, thin slices or lengthwise strips.

*Heat in boiling water—*

Small whole carrots—5 minutes

Diced or sliced—2 minutes

Lengthwise strips—2 minutes

Cool, drain, package and freeze immediately.

### CAULIFLOWER

#### Preparation

Choose firm, tender, snow white heads. Break or cut into pieces about 1 inch across. Wash. If necessary to remove insects, soak for 1/2 hour



## *Freezing Snap Beans...*

Select only fresh, tender young beans. Wash, cut or snap off the tips, and sort for size. Freeze small beans whole if desired. Cut or break larger beans into 1 or 2-inch pieces. Put beans in blanching basket, lower basket into boiling water, and cover. Keep the heat on high and begin counting heating time immediately.

*Heat in boiling water—*

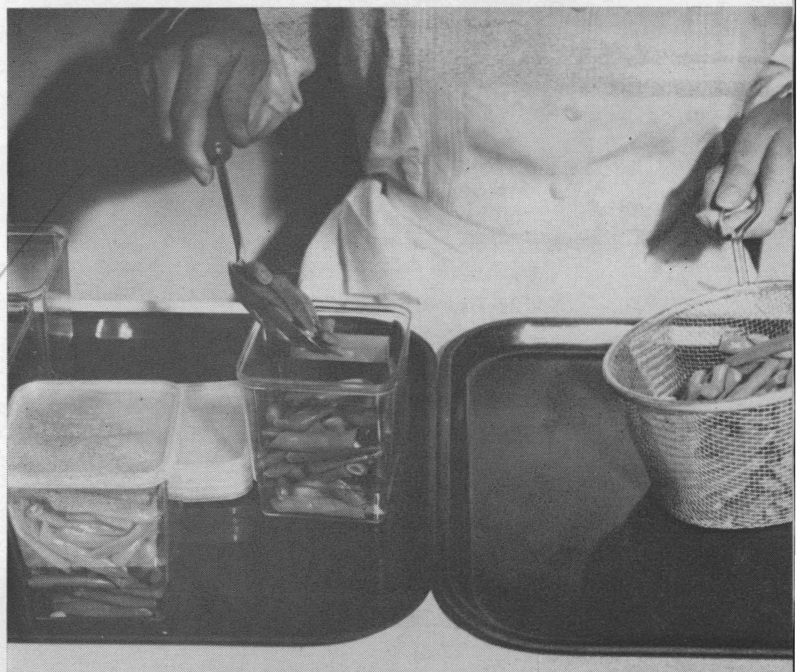
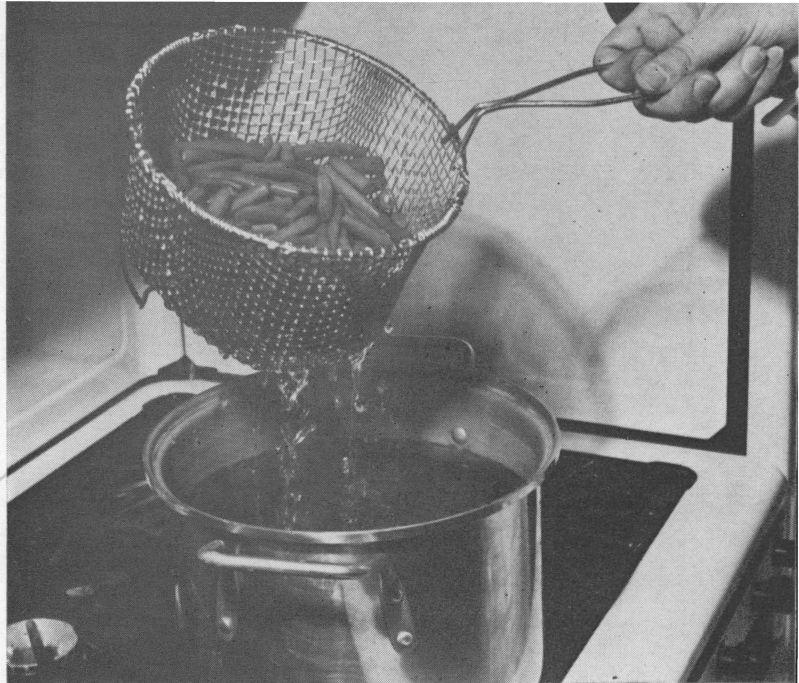
Small beans—2 minutes

Medium beans—3 minutes

Large beans—4 minutes

Plunge basket of heated beans into a large container of ice water or into running cold water. It takes about as long to cool vegetables as to heat them. When beans are cool, remove them from water and drain.

Pack the beans into moisture-vapor-proof container. Leave  $\frac{1}{2}$ -inch headspace. Label container with name of vegetable, locker number and date. Freeze immediately, and store at 0 degrees F. or below.





in a solution made of 4 teaspoons salt to 1 gallon cold water. Drain.

*Heat in boiling water—*

Add 4 teaspoons salt to a gallon of boiling water and heat 3 minutes.

Cool, drain, package and freeze immediately.

### **CORN, SWEET**

#### **Preparation**

Select ears with plump, tender kernels and thin, sweet milk. If the milk is thick and starchy, it is better to freeze corn as cream-style.

#### **Whole Grain Style**

Husk, silk, trim and wash.

*Heat in boiling water—*

4 minutes.

Cool, cut kernels from cob at about  $\frac{2}{3}$  the depth of the kernels. Package and freeze immediately.

#### **Cream Style**

Husk, silk, trim and wash.

*Heat in boiling water—*

4 minutes.

Cool, cut kernel tips once or twice no deeper than the center of the kernels. Scrape the cobs with back of knife to remove the juice and heart of the kernel. Package and freeze immediately.

#### **On-the-Cob**

Husk, silk, trim, wash and sort ears according to size.

*Heat in boiling water—*

Small ears (up to  $1\frac{1}{4}$  inches in diameter)—7 minutes.

Medium ears ( $1\frac{1}{4}$  to  $1\frac{1}{2}$  inches in diameter)—9 minutes.

Large ears (over  $1\frac{1}{2}$  inches in diameter)—11 minutes.

Cool and drain. Pack ears into containers or wrap in moisture-vapor-proof material. Freeze immediately.

### **GREENS—Spinach, Swiss Chard, Turnip Greens, Mustard Greens, Tendergreens**

#### **Preparation**

Use young, tender leaves. Wash. Remove tough stems and imperfect leaves. Cut leaves of chard into pieces as desired.

*Heat in boiling water—*

2 minutes for all greens except very tender leaves of spinach. Heat them  $1\frac{1}{2}$  minutes.

Cool, drain, package and freeze immediately.

### **OKRA**

#### **Preparation**

Select young, tender, green pods. Wash and sort according to size. Cut off stems in such a way as not to cut open seed cells.

*Heat in boiling water—*

Small pods—3 minutes.

Large pods—4 minutes.

Cool and drain. Leave whole or slice crosswise.

Package and freeze immediately.

### **PEAS, ENGLISH**

#### **Preparation**

Choose bright, green, plump, firm pods with sweet, tender peas. Wash, shell and sort according to size.

*Heat in boiling water—*

Small peas—1 minute.

Medium peas— $1\frac{1}{2}$  minutes.

Large peas—2 minutes.

Cool, drain, package and freeze immediately.

### **PEAS, SOUTHERN SHELLED**

#### **Preparation**

Select well-filled pods with tender peas. Wash, shell and sort according to size.

*Heat in boiling water—*

Small peas—3 minutes.

Medium peas—4 minutes.

Cool, drain, package and freeze immediately.

### **PEPPERS, GREEN**

#### **Preparation, Raw**

Wash, cut out stems, cut in half and remove seeds. If desired, cut into  $\frac{1}{2}$ -inch strips or rings. Pack, leaving no head space, seal and freeze immediately.

#### **Preparation, Heated**

Select firm, crisp, thick walled peppers. Wash and cut into halves or  $\frac{1}{2}$ -inch slices. Remove seeds.

*Heat in boiling water—*

Halves—3 minutes.

Slices—2 minutes.

Cool, drain, package and freeze immediately.

### **PIMIENTOS**

#### **Preparation**

Select firm, crisp, thick walled pimientos. Wash and dry. Roast in an oven at 400 degrees F. (hot oven) for 3 or 4 minutes. Remove charred skins by rinsing in cold water. Drain, core and remove seeds. Leave whole, or cut into desired size. Package and freeze immediately.

## POTATOES, IRISH

A successful method for freezing small new Irish potatoes has not been developed. Methods used thus far do not result in a product of satisfactory texture.

See page 21 for freezing French Fries.

## PUMPKIN

### Preparation

Wash, cut into small pieces, remove seeds and peel. Cook until soft in boiling water, pressure cooker or oven. Mash pulp or put through sieve. Cool by placing pan containing pumpkin over chopped ice, and stir pumpkin occasionally. Package and freeze immediately.

## RHUBARB

### Preparation

Use only tender, crisp stalks. Wash and cut into 2-inch pieces.

*Heat in boiling water—*

1 minute.

Cool, drain, package and freeze immediately. Heating helps retain color and flavor; however, rhubarb may be packed raw without sugar, or cover with cold syrup made from 3 cups of sugar to 4 cups of water.

## SQUASH, SUMMER

### Preparation

Use young squash with small seeds and tender rind. Wash and cut in 1/2-inch slices.

*Heat in boiling water—*

3 minutes.

Cool, drain, package and freeze immediately.

## SQUASH, WINTER

### Preparation

Use firm, mature squash. Wash, cut into pieces and remove seeds. Cook until soft in boiling water, pressure cooker or oven. Remove pulp from rind and mash or press through a sieve. Cool by placing pan containing squash in iced water and stir squash occasionally. Package and freeze immediately.

## SWEET POTATOES

### Preparation

Use medium to large mature potatoes that have been cured. Wash and cook until almost tender in water, pressure cooker or oven. Cool. Peel, cut in halves, slice or mash. To prevent whole sweet potatoes or slices from darkening, dip for 5 seconds in a solution containing 1 tablespoon citric acid or 1/2 cup lemon juice to 1 quart of water. To keep mashed sweet potatoes from darkening, mix 2 tablespoons orange or lemon juice with each quart of mashed potatoes. Package and freeze immediately.

## TOMATOES

### Juice:

#### Preparation

Wash and trim firm, vine-ripened tomatoes. Cut in quarters or eighths. Simmer 5 to 10 minutes. Press through a sieve. If desired, add 1 teaspoon salt to each quart of juice for seasoning. Cool and pour into containers. Freeze immediately.

### Stewed:

#### Preparation

Remove stem ends, peel and quarter ripe tomatoes. Cover and cook until tender (10 to 20 minutes). Place pan containing tomatoes in cold water to cool. Pack into containers. Seal and freeze immediately.

## ... Freezing Meats

### ● SELECTION AND PREPARATION

Freezing meat is a simple process; however, there are a few points to follow to produce a good-quality frozen product.

1. *Select a good quality meat.*
2. *Age beef and lamb.* Aging improves the tenderness and flavor of beef. The length of aging depends on the kind, weight, quality and grade. Age a choice 300-pound calf carcass at least 6 or 7 days. Hang lower grades almost this long if possible. Let choice 500 or 600-pound carcass hang at least 10 days or 2 weeks. It is not practical to hang any

kind of beef longer than 2 weeks. Age beef at a uniform temperature of 38 to 40 degrees F. Age lamb no longer than 7 days.

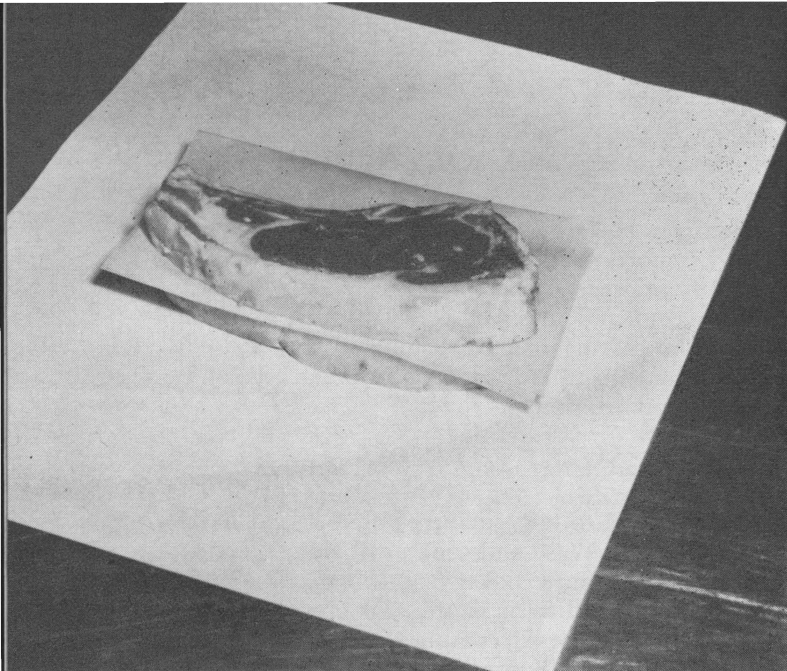
3. *Cut meat according to best improved methods.* Boneless cuts for the freezer save space. It may be best not to bone steaks, chops, short ribs and legs of lamb. Bone beef roasts and lamb shoulders.

### ● PACKAGING

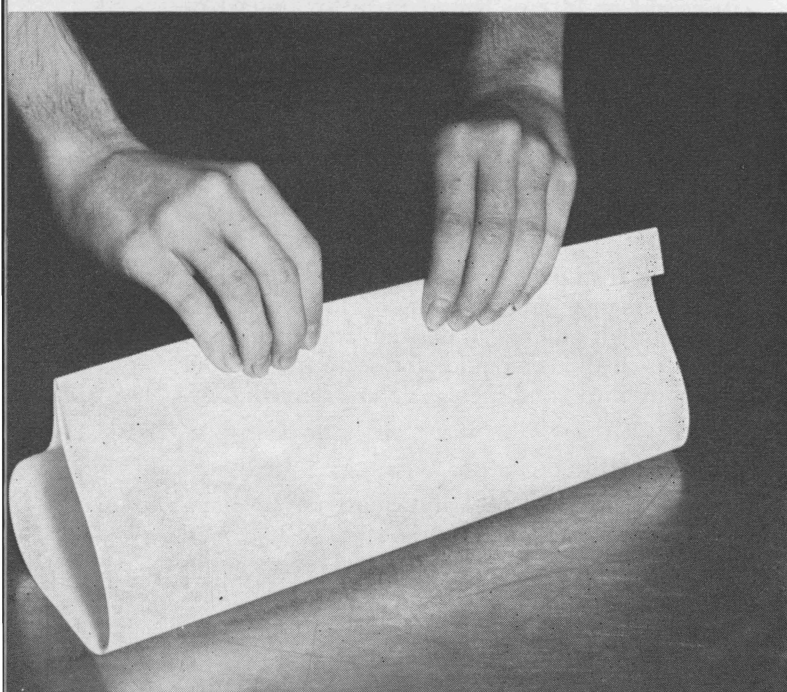
Store the size package required for a meal. Thawing and then refreezing lowers the quality of the product.



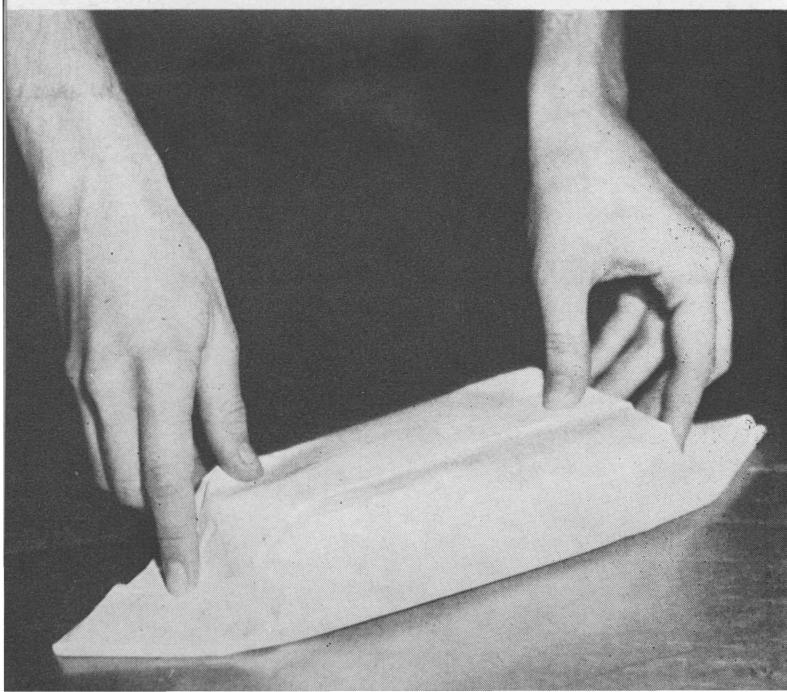
## *Beef Chops.*



Place the product in the center of the sheet of moisture-vapor-resistant paper, for the drug store wrap. Separate steaks, chops, slices or ground meat patties, with two layers of paper for ease in separation without thawing.



Bring the two sides of the paper evenly together at the top. Make the drug store fold.

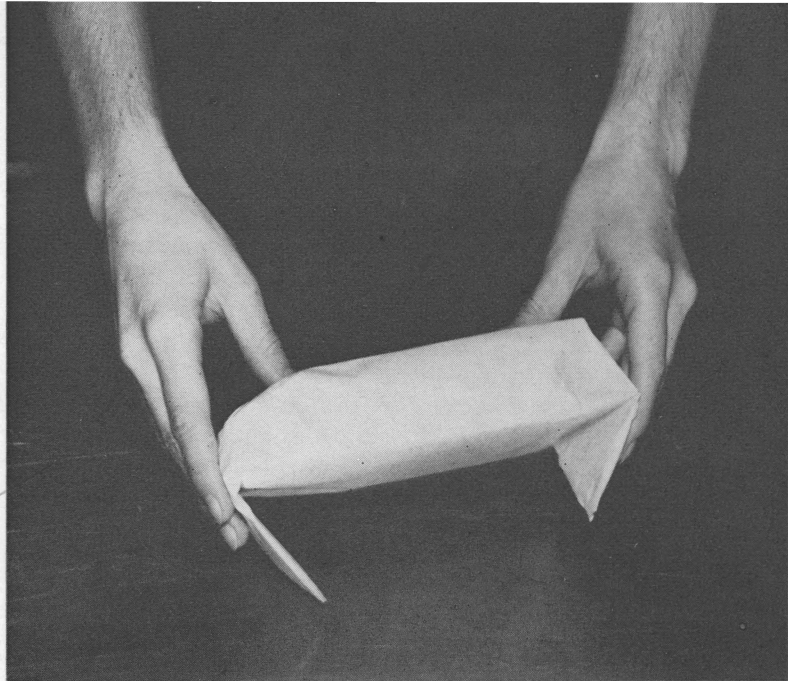


Continue folding tightly and snugly against the product. Press the fold flat against the meat. Fold the ends to exclude air pockets.



## rug Store Wrap

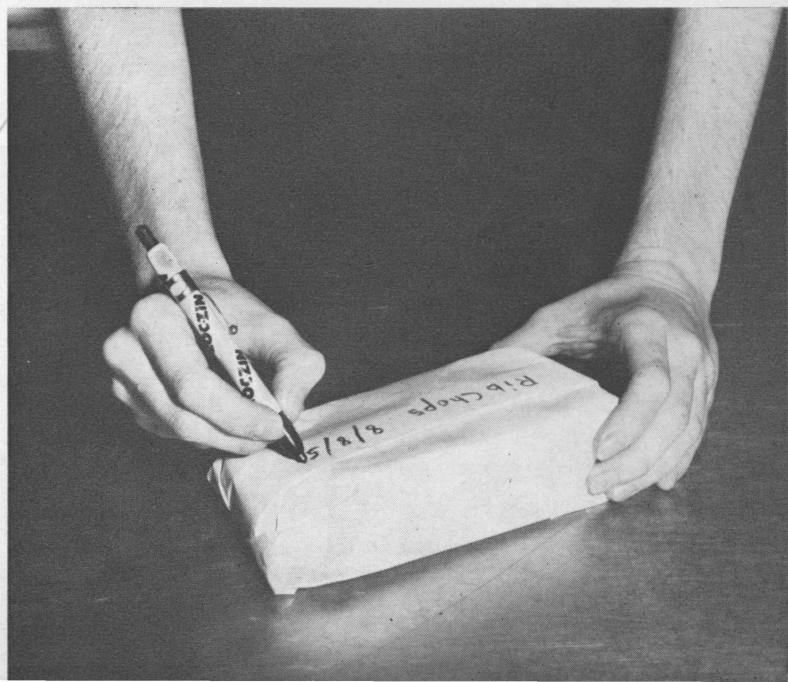
Then fold these ends under the package to make a tighter wrap.



Finally fold the ends over and seal with gum tape.



Label with the name of the product and the date on the double seam.



Dividing steaks or chops with paper is a convenience to the homemaker. The steaks and chops are separated so the meat will thaw uniformly. Use two thicknesses of freezer paper for ease in separating the slices of meat.

Use freezer paper that is moisture-vapor-resistant, easy to label, easy to handle and economical.

Label packages with name of product and date packaged. Crayon or china marking pencils work well.

## *...Freezing Miscellaneous Foods*

### ● BUTTER

Freeze fresh, thoroughly washed butter made from high-quality cream with no off-flavors. Wrap in moisture-vapor-proof material even if previously wrapped in parchment paper. Pasteurize the cream if the butter is to be stored from 4 to 6 months. Salt pasteurized butter, using  $\frac{1}{2}$  teaspoon salt per pound. Do not salt unpasteurized butter. Butter made from cream which has not been pasteurized turns rancid or acquires off flavors in 2 or 3 months.

### ● COCONUT

Remove the milk from coconut and store in refrigerator until ready to use. Remove the coconut shell. Remove the coconut meat and trim off the outside brown coat. Grate the coconut meat. Pour the coconut milk over the grated coconut meat. Pack loosely, leaving  $\frac{1}{2}$ -inch head space. Freeze immediately.

### ● CREAM

Freeze heavy cream containing not less than 40 percent butter fat. Pasteurize the cream at 145 degrees F. for 30 minutes. Add  $\frac{1}{3}$  cup of sugar to 1 quart cream. Cool thoroughly. Fill moisture-vapor-proof containers to  $\frac{1}{2}$  inch of top. Freeze immediately. Store at 0 degrees F. for no longer than 3 months.

### ● EGGS

Frozen eggs will keep in good condition from 9 to 12 months. Freeze fresh, clean, chilled eggs. Freeze in quantities in which eggs are likely to be used at one time. Eggs are broken out of the shell for freezing.

Add sugar, salt or syrup in proportions given below according to the kind of recipe in which the eggs are likely to be used. For example add salt to eggs for scrambling, sugar or syrup to those to be used in desserts.

#### Whole Eggs

Break eggs into bowl; stir with a fork enough to break yolks and mix them well with the whites. Do not beat. Strain through a sieve. To 1 cup

whole eggs (about 5 medium-sized eggs) add *one* of the following:

- $\frac{1}{2}$  tablespoon sugar
- $\frac{1}{2}$  tablespoon corn syrup
- $\frac{1}{2}$  teaspoon salt

#### Egg Yolks

Separate eggs. Stir yolks with a fork to break them. Strain through a sieve. To 1 cup of egg yolks (about 16 eggs) add *one* of the following:

- 1 tablespoon sugar
- 1 tablespoon corn syrup
- $\frac{1}{2}$  teaspoon salt

#### Egg Whites

Strain through a sieve. Freeze without stirring, and do not add anything. Package and freeze immediately.

#### Thawing

Place containers in cold running water, in refrigerator or thaw at room temperature. Mix contents of package thoroughly before using. Plan to use thawed eggs within 24 hours. Do not re-freeze.

#### Table for Correct Measurement

One tablespoon yolk is equal to one egg yolk.

Two tablespoons whites are equal to one egg white.

Three tablespoons yolks and whites are equal to one whole egg.

### ● FISH AND SEAFOODS

#### Fish

Freeze fish very soon after being caught because it deteriorates rapidly. If this is not possible, pack in ice until it can be dressed. Prepare for cooking; remove fins, head, tail, entrails and scales. Wash; cut large fish into serving pieces. Freeze small fish whole. Dip fish in a salt solution for 1 minute (1 cup salt to 1 gallon water). Wrap tightly in moisture-vapor-proof wrapping material. Freeze immediately.

#### Oysters

Choose fresh, live oysters. Shuck oysters as for immediate use. Wash oyster meats in fresh salted



water (1/2 cup salt to 1 gallon cold water). Drain and package in moisture-vapor-proof cartons. Freeze immediately.

### **Shrimp**

Fresh, large size shrimp may be packed for freezing shelled or unshelled, cooked or uncooked. Remove the heads and the dark vein down the back as soon as possible.

### **Freezing Raw Shrimp in Shell**

Wash (remove heads and dark vein); wash again in salt water (2 tablespoons per 1 quart cold water). Drain thoroughly. Package and freeze immediately.

### **Freezing Shelled, Cooked Shrimp**

Wash in salted water (heads removed), drain. Cook in boiling water for 10 minutes; cool thoroughly. Shell and remove dark vein, if this was not done when head was removed. Rinse, drain and cool. Pack in moisture-vapor-proof containers. Freeze immediately. Cooked shrimp may toughen slightly during storage.

## ● ICE CREAM

Store ice cream no longer than 3 weeks for a top quality product.

If homemade ice cream is to be stored, make it from a recipe that contains gelatin and eggs. Use a pure extract as an imitation extract tends to change flavor during storage. A cooked custard makes a better frozen product. Stir the ice cream frequently if it is frozen in an electric refrigerator. The ice particles must be kept as small as possible as they have a tendency to increase in size during storage. If a crank type freezer is used for freezing the ice cream, use 1 part salt to 12 parts ice. This requires a longer freezing period but is necessary to get a smooth ice cream.

Freeze the custard as firm as possible in the freezer or refrigerator. Pack immediately in moisture-vapor-proof cartons to top of container so there are no air spaces remaining in the container.

## ● PECANS

Package fresh, shelled pecans in moisture-vapor-proof containers. Seal and freeze immediately.

## *... Freezing Prepared Foods*

With the aid of a home freezer it is possible to prepare and freeze pies, cakes, breads and many other prepared products for future use.

Freezing large quantities of prepared or cooked foods is not recommended because it is not the best use of freezer storage space. Many problems arise in freezing precooked foods and combinations of foods. Even one ingredient in a prepared food may cause difficulty. Frozen cooked foods often have a "warmed over" flavor. The following suggestions are recommended to obtain good quality in frozen prepared foods.

## ● QUICK BREADS

Use a standard recipe. Use double-acting baking powder. Biscuits and muffins are better frozen uncooked. Bran muffins, fruit and nut breads are better baked before freezing.

### **Biscuits**

Roll, cut and separate by double layer of cellophane or other moisture-vapor-proof paper. Pack tightly in moisture-vapor-proof package, freeze and store. Do not store longer than 2 to 4 weeks. Biscuits may be baked thawed or unthawed. Bake thawed biscuits on a greased baking sheet for 12 to 15 minutes and unthawed 20 to 25 minutes at 450 degrees F.

### **Muffins**

Place batter in baking cups. Freeze, wrap, seal and store. Do not store longer than 2 to 4 weeks. To prepare for serving, thaw at room temperature 1 hour. Bake as for fresh muffins.

### **Bran Muffins, Fruit and Nut Bread**

Bake, cool and wrap in moisture-vapor-proof material, freeze and store. Do not store longer than 3 months.

To prepare for serving, thaw in original wrapping at room temperature or in a 250 to 300 degrees F. oven.

## ● YEAST BREADS

*Baked yeast rolls and bread freeze well.* Use a recipe with a fairly large amount of fat and sugar. Prepare and bake as usual; cool, wrap in moisture-vapor-proof material, seal and freeze. Thaw frozen bread in the wrappings at room temperature.

Rolls are better if thawed and heated in a 250 to 300 degrees F. oven for 15 to 20 minutes depending on size of rolls. Baked yeast breads lose quality gradually. Do not store longer than 2 months.

## ● CAKES AND FROSTING

### **Cakes**

Cakes made by standard recipes freeze well, especially if baked before freezing. Prebaked cakes



containing fat may dry out slightly after 2 months, and after 4 months, flavor changes may be expected. Use pure extracts as imitation extracts may produce off-flavors. Angel food, yellow sponge, chiffon and fruit cakes baked before freezing will keep satisfactorily up to 1 year.

Bake cake; cool and freeze before packaging for ease in handling. Wrap in moisture-vapor-proof material. Since cakes do not freeze solid, place in a metal container or heavy carton to prevent crushing.

Thaw baked cakes in their original wrappings to prevent formation of moisture on the surface of the cake. A large cake will thaw in about 2 hours at room temperature.

#### **Frostings and Fillings**

Uncooked confectioner's sugar frostings freeze best. Fat in a frosting helps keep it from drying and forming crystals. Candy-type frostings such as fudge and penuche are satisfactory if cake is stored no longer than 3 or 4 weeks. Boiled and other soft frostings containing egg whites and cream fillings are not suitable for cakes to be frozen.

#### **• COOKIES**

Cookies of bar, dropped, rolled and refrigerator types may be frozen unbaked or baked, and the quality during storage for 6 months to 1 year is similar to fresh cookies. Recipes high in fat and low in moisture are best for freezing. Cookie dough and baked cookies are packed in moisture-vapor-proof containers of suitable size and shape. Thaw baked cookies in original containers at room temperature. Unbaked doughs are easier to package and take less storage space than baked cookies. Thaw frozen drop or bar cookie dough at room temperature until soft enough to drop by spoonfuls on baking sheet or pour into baking pan. Most refrigerator cookies may be sliced without thawing;

some may need partial thawing in a refrigerator. Bake same as fresh cookies.

#### **• PIES AND PIE MIX**

Fresh fruit pies; vegetable pies such as squash, pumpkin and sweet potato; mince pies; chocolate and lemon chiffon pies freeze successfully. Custard pies do not freeze successfully. Meringue toppings tend to toughen, shrink, separate and stick to the wrapping. Baked and unbaked pie shells and graham cracker shells may be frozen. Use standard recipes.

Fruit pies may be frozen either before or after baking. Crust is more tender and flaky and flavor fresher when pies are frozen before baking. Use paper or aluminum foil plates made for baking, or rust-proof metal pie plates if available.

Special treatment is needed to preserve color and flavor for fruits such as apples and peaches, in unbaked pies. Steam apple slices 2 minutes, cool, and drain; or dip raw apple slices in a solution of ½ teaspoon (or ten 100-milligram tablets) ascorbic acid to 1 cup water. Apples for four or five pies can be dipped in this amount of solution. Peel peaches without scalding, and slice. Mix peach slices with 1 tablespoon lemon juice or ascorbic acid solution made by dissolving ¼ teaspoon (or five 100-milligram tablets) ascorbic acid in 1 tablespoon water. Coat berries or cherries with a mixture of sugar and flour. Use spices lightly, especially cloves, because they may become bitter and discolor frozen filling.

Do not freeze lattice top pies. Do not cut steam vents in top crust of frozen unbaked pies until pies are removed from freezer. Cut steam vents just before baking. When freezing baked pies, prepare as usual and cool thoroughly before wrapping. Wrap pie in moisture-vapor-proof material and seal. Cover pie with a paper plate and place in stockinette or paper box for added protection.

The best way to thaw frozen baked fruit pies is to remove wrapper and heat pie at once in a moderate oven (375 degrees F.) for 30 minutes. Bake frozen unbaked fruit pies the same as fresh pies, allowing 10 minutes longer. Allow chiffon pies to thaw at room temperature. Store frozen pies only 2 to 3 months.

If freezer space is limited, it is wise to freeze pie mix. Ingredients for squash, pumpkin and sweet potato pies including the milk, the thickening agent, sweetening, eggs (if needed) and spices (except cloves) may be mixed together and frozen. A pint container holds about the right amount for an 8-inch pie. Do not store longer than 2 months. When ready to use, partially thaw in the original



container, add other ingredients, if needed, and pour into pastry lined pie pan. Bake as usual.

## ● MEATS AND POULTRY

### Meat Loaf and Meat Balls

Use a standard recipe; do not overcook. Cool, package in moisture-vapor-proof or resistant containers or materials, and freeze immediately. Store no longer than 6 months. To prepare for serving, heat in top of double boiler or in the oven.

### Roast Meats and Poultry

Use standard recipes. Roast beef, pork, ham, chicken and turkey freeze satisfactorily. Leave in large, compact pieces whenever possible. If frozen in small pieces, cover with gravy or sauce to prevent stale flavor. Package in moisture-vapor-proof or resistant containers. Freeze dressing separately. Thaw meats frozen dry in the original wrapping in the refrigerator, at room temperature, or by setting container in water. Serve cold or reheat. Meat frozen in sauce may be reheated in a double-boiler, covered casserole, steamer or over direct heat. Place dressing, before it is completely thawed, in greased casserole. Add a small amount of water, cover and heat at 350 degrees F. in oven.

## ● COMBINATION DISHES

### Creamed Dishes

Freeze almost any type of creamed dish except those containing hard-cooked egg whites. Avoid overcooking. Cool rapidly in pan of ice water. Package in wide-mouth containers. Do not store longer than 2 to 4 months. To prepare for serving, heat frozen food in double boiler. Stir occasionally. About 30 minutes is required for thawing and heating 1 pint. Sauces and gravies made with wheat flour tend to separate or curdle and lump during thawing and reheating. Stir until smooth. To prevent curdling use rice flour as a thickening agent.

### Stews

Add vegetables when meat is nearly cooked. Do not overcook. Cook meat until tender, but firm. Keep the sauce pan covered during the entire cooking period. Simmer, do not boil. Take the amount to be frozen from the saucepan before the food is cooked completely. Cool, package in moisture-vapor-proof containers and freeze immediately. Do not store longer than 4 months. If stew is to be kept more than 2 months, omit salt and thickening agent.

### Soups

Select vegetables that freeze well. Do not cook the vegetables completely. Freeze only concentrated mixtures to save space. Prepare and cool

the soup. Package in moisture-vapor-proof containers. Do not store longer than 4 months. To prepare for serving, heat quickly from frozen state.

### Fish Dishes

Use standard recipes for fish dishes such as fish a la king, fish in cheese sauce, fish and rice, fish chowder and fish in creole sauce. Prepare as if it were to be served immediately. Package in moisture-vapor-proof containers. Freeze and store. Do not store longer than 5 months. Heat and serve.

## ● BAKED BEANS

Prepare baked beans by standard recipe. Cool quickly. Package in moisture-vapor-proof containers. Do not store longer than 6 months. To prepare for serving, partially thaw at room temperature in package to prevent overcooking. Heat to serving temperature in casserole or double boiler.

## ● POTATOES, FRENCH FRIES

Select mature potatoes suitable for French frying. Wash, pare and cut into 1/4-inch uniform strips. Heat in boiling water 2 minutes or blanch in steam 3 minutes. Chill in cold water 3 minutes. Drain and tumble dry in towel. Fill fry kettle one-third full of fat and heat to 360 degrees F., keeping the fry basket in the fat. Raise basket and add potato strips to cover bottom of basket. Lower basket into fat and fry until strips are cooked but not brown.

Remove basket from fat and drain potato strips before turning out on paper towels. Cool strips to room temperature; package and freeze immediately. Store no longer than 3 or 4 months for best quality.

*To brown in fat.* Thaw strips in package at room temperature for 2 to 3 hours. Remove strips from container, pat lightly with towels to remove condensed moisture. Be sure all strips are at room temperature before they are put into hot fat. Heat fat to 375 degrees F. with basket in fat. Lift basket and put about two layers of completely thawed potatoes in basket. Fry for about 1 minute, or until potatoes are golden brown. Remove from fat, drain and serve immediately.

*To brown in oven.* Brown unthawed potato strips in 500 degrees F. oven for 10 minutes, turning as needed or brown in oven 5 minutes followed by 3 minutes in the broiler. Parfries browned in the oven or broiler are less tender and less oily than those that are browned in fat.

## ● SALADS

Freezing destroys the crispness, flavor and color of raw vegetables; therefore, few vegetable salads are suitable for freezing.

The most satisfactory frozen fruit salad is the type that is commonly frozen in the refrigerator. Suitable bases for these salads are combinations of cream cheese or cottage cheese, whipped cream and mayonnaise. The addition of gelatin improves the mayonnaise and whipped cream mixture; it is not needed when cream cheese or cottage cheese is used.

Nuts are likely to discolor and become bitter in salads. Probably any recipe which is satisfactory for salads frozen in the ice cube tray of the refrigerator, will be satisfactory frozen and stored in the home freezer or locker. Freeze in suitable containers or wrap in moisture-vapor-proof material. To serve, remove and cut in serving pieces. Some of the frozen mixtures may be served as desserts as well as salads.

#### ● SANDWICHES

Luncheon meats, left-over sliced roast beef, roast beef, roast pork, baked ham, chicken, turkey, dried

beef, tuna, salmon, sliced cheese, cheese spreads, hard-cooked egg yolks, and peanut butter make good sandwich fillings. Add sliced or chopped olives and pickles to any of these. Sandwich fillings may be frozen separately for use later.

All sandwich spreads do not freeze satisfactorily. Jelly, mayonnaise and salad dressings used as spreads, soak into the bread. Hard-cooked egg whites develop off-flavors and change in texture. Do not freeze lettuce, celery, tomatoes or carrots. Add these to the sandwich after it has been taken from the freezer. Frozen slices of bread may be used to make sandwiches. Wrap sandwiches in double thickness of heavy waxed paper for 1 week's storage; in moisture-vapor-resistant material for longer storage. Do not store any sandwich longer than 3 weeks.

Thaw sandwiches at room temperature about 3 hours.

### *...Preparing Frozen Foods for the Table*

The natural quality, fresh flavor, color and texture of frozen food depends as much on the way it is handled from freezer to table as in preparing for the freezer.

#### ● USING FROZEN VEGETABLES

The secret of cooking frozen vegetables successfully is to cook them until just tender, thus saving vitamins, bright color and fresh flavor.

Frozen vegetables may be cooked in a small amount of water, steamed or baked. They may also be cooked in a pressure saucepan or a covered fry pan.

#### Cooking in a Small Amount of Water

You can cook most frozen vegetables without thawing them first. Leafy vegetables, such as spinach, cook more evenly if thawed just enough to separate the leaves before cooking. Corn-on-the-cob should be thawed partially before cooking, so the cob will be heated through by the time the corn is cooked. Holding corn after thawing or cooking causes sogginess.

Bring water to a boil in a covered saucepan. The amount of water to use depends on the vegetable and the size of the package. For most vegetables  $\frac{1}{2}$  cup of water is enough for a pint package. The frost in the packages furnishes additional moisture.

Put the frozen vegetable in the boiling water; cover the pan and bring the water quickly back

to a boil. To insure uniform cooking, it may be necessary to separate pieces carefully with a fork. When the water is boiling throughout the pan, reduce the heat and start counting time. Be sure the pan is covered to retain steam, which aids in cooking. Cook gently until vegetables are just tender.

Add table fat and seasonings. Serve immediately.

The following timetable shows about how long it takes to cook 1 pint of various frozen vegetables to tender stage in a small amount of water. Use the table only as a general guide. Cooking times vary among varieties and with the maturity of the frozen vegetables.

The time required for cooking vegetables is slightly longer at high than at low altitudes because the temperature of boiling water decreases about 2 degrees F. with each 1,000 feet above sea level.

#### Steaming

Partially thaw vegetables, so pieces can be separated. Put vegetables in a steamer over rapidly boiling water. Cover and start counting time immediately. Cook until just tender.

Add table fat and seasonings and serve immediately.



The timetable for cooking vegetables in a small amount of water (below) may also be used as a guide for steaming vegetables.

#### Timetable for Cooking Frozen Vegetables in Small Amount of Water

Vegetable	Minutes to cook after water returns to boil
Asparagus	5-10
Beans, lima	6-10
Beans, snap, 1-inch pieces	12-18
Carrots	5-10
Cauliflower	5-8
Chard	8-10
Corn	
whole-kernel	3-5
on-the-cob	3-4
Mustard greens	8-15
Peas, English	5-10
Spinach	4-6
Squash, summer	10-12
Turnip greens	15-20

#### Cooking in a Pressure Saucepan

Thaw vegetables until they can be broken apart easily.

Heat water to boiling in covered pressure saucepan. Put the vegetable in the pan and fasten cover.

To prevent overcooking, time the cooking carefully and, as soon as cooking time is up, reduce the pressure as quickly as possible.

Add table fat and seasonings and serve immediately.

Use manufacturer's directions for amount of liquid and cooking time.

#### Baking

Many frozen vegetables may be baked in a covered casserole. Partially defrost vegetables to separate pieces.

Put vegetable in a greased casserole; add table fat and seasoning. Cover and bake until just tender.

The time it takes to bake vegetables varies with size of pieces and how much they are thawed before baking.

Approximate time for baking most thawed vegetables is 45 minutes at 350 degrees F. Slightly more time may be required if other foods are being baked at the same time.

To bake corn-on-the-cob, partially thaw the ears first. Brush with melted table fat, salt and roast in a 400 degree F. oven about 20 minutes.

#### Pan Frying

Use a heavy fry pan with cover. Place about 1 tablespoon melted fat in pan. Add 1 pint frozen vegetables which have been thawed enough to separate pieces. Cook covered over moderate heat. Stir occasionally. Cook until just tender. Season to taste and serve immediately.

Peas, asparagus and broccoli will cook until tender in a fry pan in about 10 minutes. Mushrooms will be done in 10 to 15 minutes and snap beans in 15 to 20 minutes.

#### Other Ways to Prepare Frozen Vegetables

Vegetables that are cooked until tender before freezing need only to be seasoned and heated before serving. Cooked frozen vegetables can be used in many dishes the same as cooked fresh vegetables. They may be creamed or scalloped, served au gratin or added to souffles, cream soups or salads.

Pumpkin, winter squash and sweet potatoes may be thawed and used as the main ingredient in pie fillings.

#### • USING FROZEN FRUITS

Frozen fruits can be made quickly into delicious desserts or served partially or completely thawed. Use fruits immediately after thawing. Use as fresh fruits in pies, tarts, cobblers, short cakes, muffins, upside down cakes and frozen desserts. Frozen fruits often have more juice than called for in recipes for baked products using fresh fruits. In that case, use only part of the juice or add more thickening for the extra juice.

#### Thawing Time

Thaw fruit in original unopened package. The average time required for completely thawing a pint package of fruit:

Refrigerator (on shelf).....	4 to 6 hours
Room temperatures.....	2 to 4 hours
Pan of cool water.....	1/2 to 1 hour

Turn several times for even thawing.

Both sugar and syrup packs thaw faster than unsweetened packs.

#### Using Crushed Fruit and Purees

Serve crushed fruit as raw fruit after it is partially or completely thawed. Use thawed crushed fruit and purees in puddings, ice cream, sherbet, jams, pies, fruit-filled coffee cakes or as a topping for ice cream or cake.

#### • USING FROZEN MEATS

Meat can be cooked either while frozen or after it has thawed. The meat will be cooked more uniformly if thawed before cooking, and there will

be less loss of juices and flavor. The cooking time for unthawed meat is increased 15 to 20 minutes per pound. Cook completely thawed meat exactly as fresh meat. Keep meat in original package during thawing time.

#### Thawing Time

Refrigerator (on shelf).....5 to 8 hours per pound  
 Room temperature.....2 hours per pound  
 Room temperature in front  
 of electric fan.....45 minutes per pound

Thawed frozen meat deteriorates more rapidly than fresh meat. Cook immediately after meat has thawed. Follow directions as for cooking fresh meat.

#### ● USING FROZEN POULTRY

Thaw poultry in the package on a shelf in refrigerator, at room temperature or in front of an electric fan. Completely thaw poultry for roasting and cook at once as fresh poultry. It is not necessary to thaw broilers or fryers completely, but allow extra cooking time. Start partially thawed birds at lower cooking temperature to get a uniformly cooked product.

#### Thawing Time

Allow 6 hours per pound to defrost a fowl in household refrigerator and approximately 1 hour per pound to thaw at room temperature.

#### Keeping Records of Frozen Food

A simple notebook may be used in which the date, name of food and number of packages may be recorded. When 1 package is removed from the freezer, that package number is marked out.

A suggested plan is shown below after a box of strawberries and one of dewberries have been

removed from the home freezer or locker. If care is not taken to number the packages, a mark may stand for each package as in the case of pork chops.

Date	Food	
4/1/60	Strawberries	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
4/2/60	Strawberries	11, 12, 13, 14, 15, 16, 17, 18
5/1/60	Dewberries	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
5/3/60	Dewberries	11, 12, 13, 14, 15, 16, 17, 18
1/6/60	Pork Chops	1, 1, 1, 1, 1, 1, 1, 1, 1, 1

#### REFERENCES

1. Home Freezing of Fruits and Vegetables, Home & Garden Bulletin No. 10, U. S. Department of Agriculture.
2. Freezing Meat and Fish in The Home, Home and Garden Bulletin No. 93, U. S. Department of Agriculture.
3. Freezing Combination Main Dishes, Home and Garden Bulletin No. 40, U. S. Department of Agriculture.
4. Procedures For Home Freezing of Vegetables, Fruits and Prepared Foods, Classified Notes on Review of Literature, Agriculture Handbook No. 2, U. S. Department of Agriculture.
5. U. S. Department of Agriculture, Fruit and Vegetable Products Laboratory, Weslaco, Texas.

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